

Work Order ID 50799

July 22, 2009 2:56:34 PM



Page 1

Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: 09-07-22 Date: *mu*

Tooling:

Date:

Run Start



QC: Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D212-664-247	Rev A
--------------	-------

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D212-664-207 CHG001

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D212-664-247 using CNC bender program and Folio FT


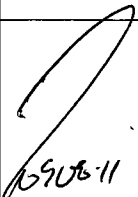
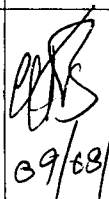

DP 9-8-~~15~~

P70

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D212-664-207 PAR #: N/A Fault Category: Cross Tube NCR: Yes No DQA: See per 09-083 Date: 09.08.12
Scrap / Scrap QA: N/C Closed: ✓ Date: 09-08-12

NCR: 50799		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09-08-05	120	Tube split @ 28% up from the end of the tube and roughly 9.5% long. A 15" mandrel was used & inserted into the end of the tube. Tube broke on 1st pass through the barrel with the revised program. RC: See NCR 09-083	 09/08/07 QSI042	• Tube is scrap. - will be sending tube to supplier for evaluation to determine the root cause.	09/08/11	 09/08/11	 09/08/07 QSI042	 09/08/05

NOTE: Date & initial all entries

Work Order ID 50799

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Page 2

Item ID: D212-664-207

Accept

Revision ID: A

Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00

Required Date: 07/31/2009 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

140

Crosstubes

0.00



Crosstubes

Memo

0.00

Crosstubes

1-Drill Rivet holes as per Dwg D212-664-247 using DT8972. 12-Drill pilot holes in tube as per Dwg D212-664-247 using DT8550 and DT8551. 13-Ream hole to finish size in tube as per Dwg D212-664-247. 14-Deburr & Inspect for surface damage. Repair damage within 1

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat Tube & Cuffs

SCVAD

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50799

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Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038 Issue P/O: _____ LPI as per
ASTM 1417 Level 2 Attach copy of NDT results to work order

SCV 11/2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50799

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Item ID: D212-664-207

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Revision ID: A

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Start Date: 07/23/2009 Start Qty: 1.00

Required Date: 07/31/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190



Packaging

Packaging

Packaging

Memo

Ensure copy of NDT results attached to work order.

0.00

0.00

200



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

Inspect for damage & ensure results are as per Dwg D412-664-203

0.00

0.00

210



Crosstubes

Crosstubes

Crosstubes

Memo

1-Rivet Cuffs as per Dwg D212-664-247. with Sika flex in Between tube & Cuff 1A/R SIKAFLEX -241/-291 BATCH: _____

0.00

0.00

SC vmp

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50799

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Item ID: D212-664-207

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Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00



SprayPaint

SprayPaint

Memo

0.00

1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside
crosstube with White Imron as per QSI 005 4.2 ☐PRIME:☐Start
Time: ☐Finish Time: ☐PAINT:☐Start
Time: ☐Finish Time: ☐

230

0.00



QC14- Inspect Spray Paint

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

240

0.00



Crosstubes

Crosstubes

Memo

0.00

1- Assemble as per Dwg D212-664-247 2- Lightly scuff the bonded area using
a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 3- Instal
support with magnobond 6398 per dwg D212-664-247, 4- Cure for 12hrs before
packaging. 5- Time & date of appli

Scuff

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50799

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Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

270



Packaging

Packaging

Packaging

Memo

Identify and pack for shipping as per PPP D212-664-207

0.00

0.00

SC 11/14/09

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 50799

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Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 07/31/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

MF 09-08-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:33 PM

Page 1/5

Work Order ID: 50799

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3428-1RevA		Manufactured	No			100	Each	18.0000	1.0000			
Placard												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	18	
47310	8	
48359	10	

Scrap

D212-664-2071TRNRevA Manufactured No 140 Each 0.0000 1.0000

Crosstube Turning Detail



B50680 DP 9-7-30

D3660-1RevB

Manufactured No 220 Each 10.0000 2.0000



CUFF

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	10	
44455	4	
46705	6	

Scrap

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 50799



Parent Item: D212-664-207RevA



Parent Item Name: Crosstube Low Standard Aft

Start Date: 07/23/2009

Required Date: 07/31/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
CR3212-4-06		Purchased	No			240	Each	346.0000	44.0000			
CHERRY RIVET												

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST

346

107534

346

D2940-1RevB

Manufactured

No

240

Each

74.0000

2.0000



Support

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST

74

24367

4

25594

2

41536

10

41870

20

45203

18

47748

20

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 50799

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft


Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3595-063-530RevA		Manufactured	No			240	Each	162.0000	4.0000			
												
RUBBER CUSHION												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

162

40780

2

44998

48

50030

112

AN6-40A

Purchased

No

260

Each

31.0000

4.0000



Bolt

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

31

111424

31

AN6-41A

Purchased

No

260

Each

67.0000

2.0000



Bolt

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

67

109371

17

111605

50

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Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:33 PM

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Work Order ID: 50799

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft



Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD616		Purchased	No			260	Each	398.0000	18.0000			
												
Washer												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	398	
107242	3	
107959	6	
109371	8	
110704	23	
111193	18	
111607	340	

MS21042L6

Purchased

No

260

Each

779.0000

6.0000



Nut

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	779	
105077	22	
110002	257	
111548	100	
111578	400	

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Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 50799

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Comments:

Start Date: 07/23/2009

Required Date: 07/31/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21920-28		Purchased	No			260	Each	150.0000	4.0000			



Clamp(per MIL-DTL-8783C)



<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
OFFSHORE		
FG	5	
105884	5	
Main Warehouse		
ST	145	
106864	5	
108466	9	
108847	7	
109181	14	
109965	10	
111281	50	
111734	50	

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Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

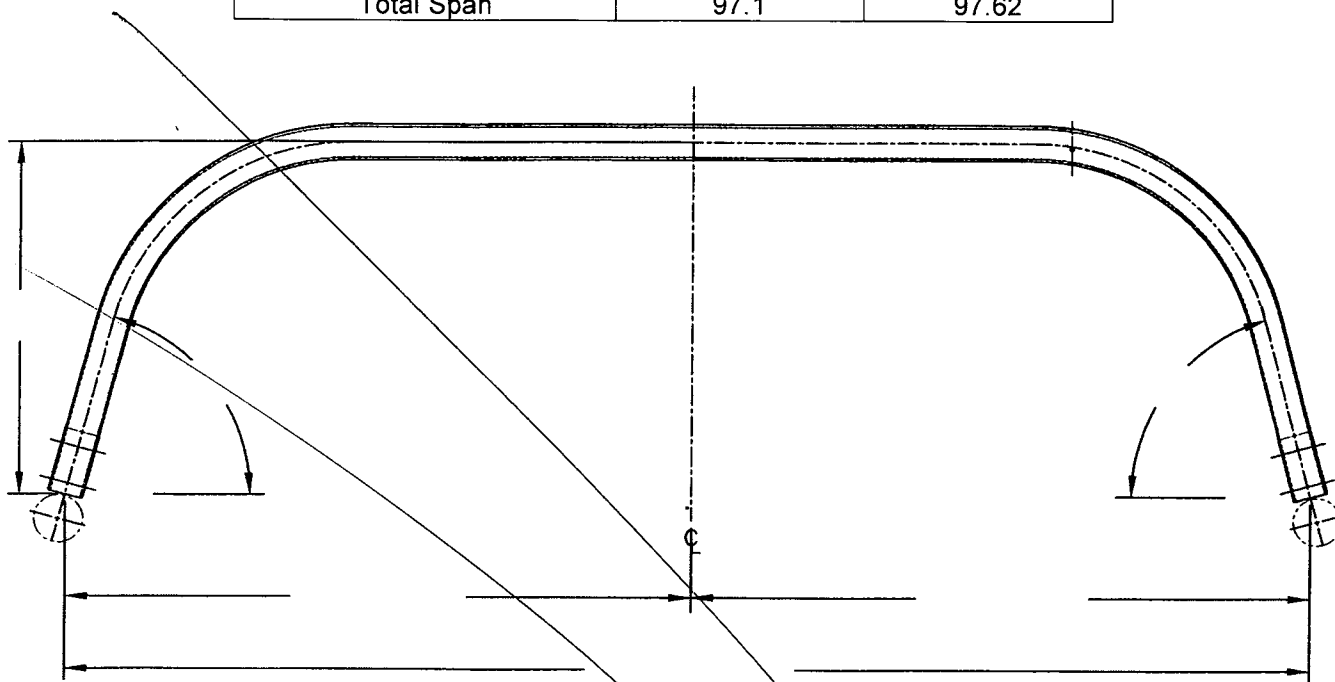
QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	50799
Description: Crosstube Low Aft (205/212)		Part Number:	D212-664-207
Inspection Dwg: D212-664-247 Rev: A		Page 1 of 1	

Required Dimension	Min	Max
Height	18.16	18.42
1/2 Span	48.55	48.81
Angle	49	52
Total Span	97.1	97.62



Comments

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	08.02.29	New Issue	KJ/JM	

PARTS LIST:

Qty	Part Number	Description
X	D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)
1	D6008-132	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
2	D3660-1	CUFF
4	MS21920-28	CLAMP (OR MS21920-30)
44	CR3212-4-06	RIVET (OR M7885/3-4-06)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

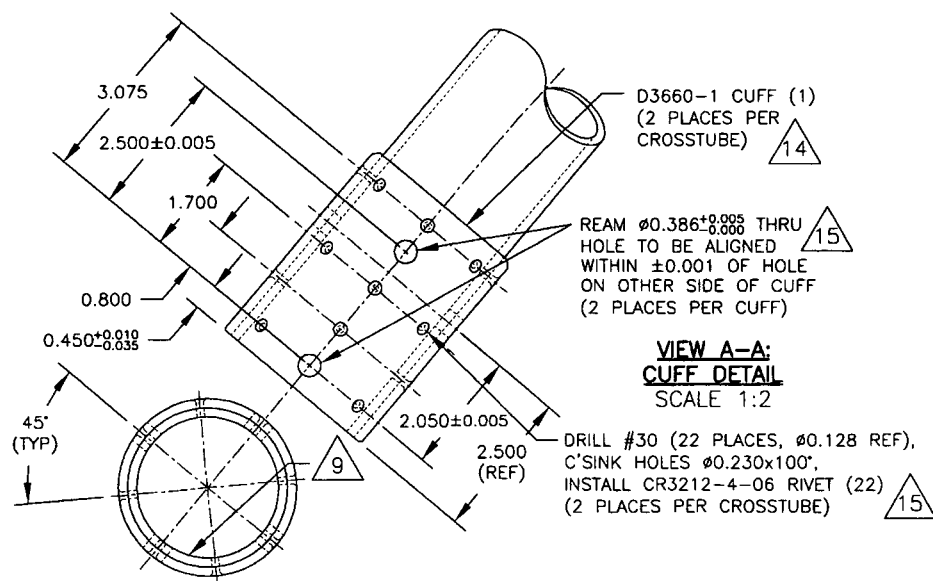
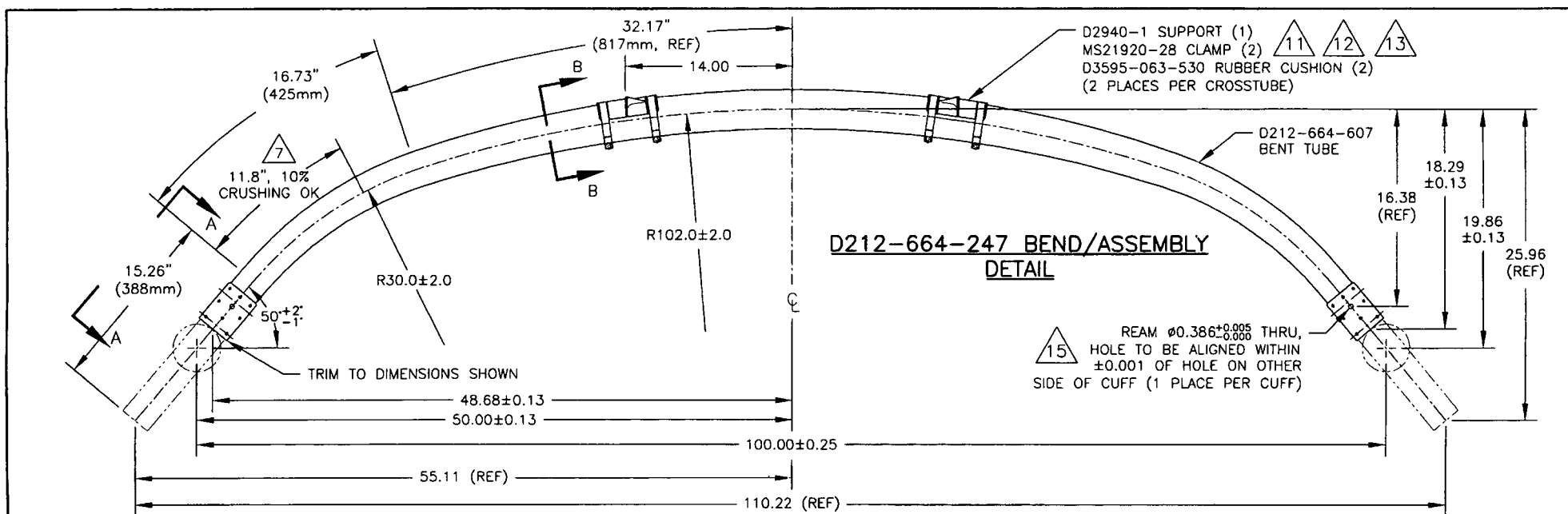
- 1) MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.27±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY.
TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 8% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A
VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1
THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE
D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY
AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A
LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN
CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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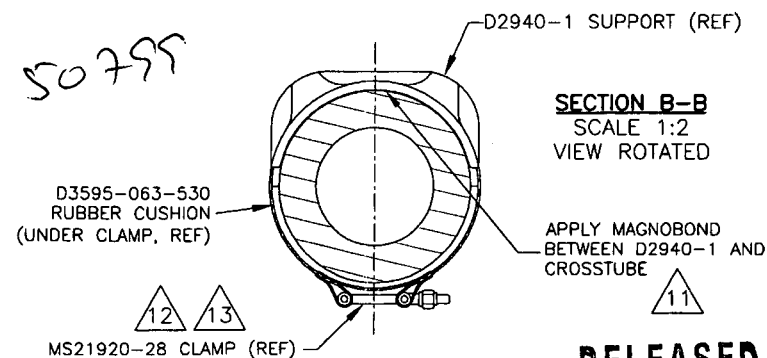
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A		07.07.07	NEW ISSUE
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CHECKED <i>ph</i>	APPROVED <i>ph</i>	DRAWING NO. D212-664-247	REV. A SHEET 1 OF 3
DATE 07.07.07		TITLE CROSSTUBE (205/212 LOW AFT)	SCALE NTS

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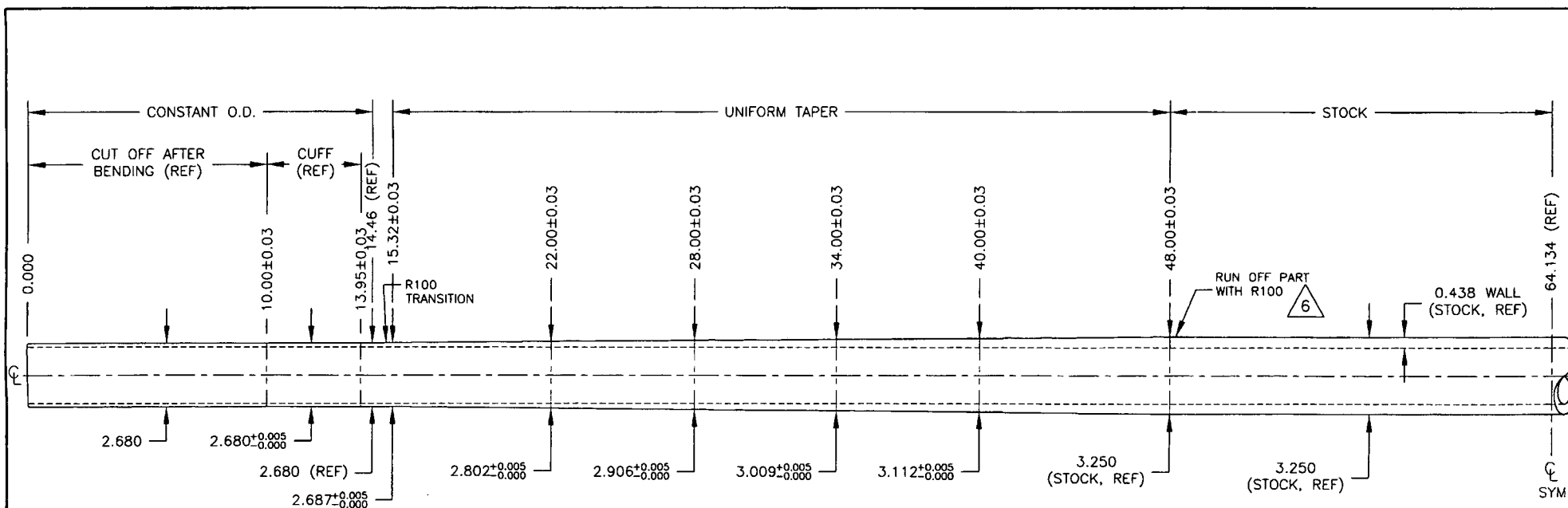


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		DATE 07.07.07	DRAWING NO. D212-664-247	SHEET 2 OF 3
		TITLE CROSSTUBE (205/212 LOW AFT)		SCALE 1:8



D212-664-247 MACHINING DETAIL

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		DATE 07.07.07	TITLE CROSSTUBE (205/212 LOW AFT)		SCALE 1:4

DRAWING NO. D212-664-247	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-247-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>OP</i>	CHECKED <i>PR</i>	MFG. APPR. <i>LA</i>	APPROVED <i>AMP</i>		DE APPR. <i>[Signature]</i>		
DATE 09.05.01	DATE 09.06.15	DATE 09/06/22	DATE 09/06/22		DATE 09.06.22		

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)

THE D212-664-247B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-247 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-247 CROSSTUBE.

RELEASED
09/06/22

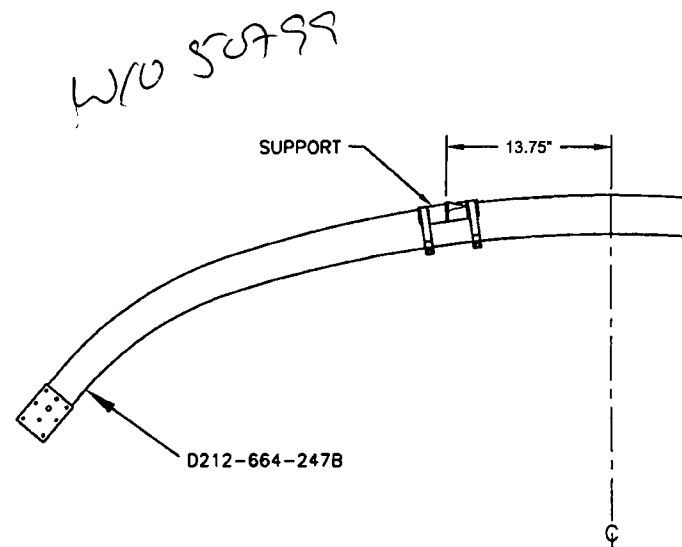


FIGURE 1 - SUPPORT INSTALLATION

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